



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/529,518

10/04/2005

Yuri Sergeevich Volkov

P07129US00

6161

22885 7590 12/09/2010  
MCKEE, VOORHEES & SEASE, P.L.C.  
801 GRAND AVENUE  
SUITE 3200  
DES MOINES, IA 50309-2721

EXAMINER

WALTERS JR, ROBERT S

ART UNIT

PAPER NUMBER

1711

NOTIFICATION DATE

DELIVERY MODE

12/09/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patatty@ipmvs.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,518	<b>Applicant(s)</b> VOLKOV ET AL.	
	<b>Examiner</b> ROBERT S. WALTERS JR	<b>Art Unit</b> 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 21-26 and 29-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-26 and 29-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1711

## **DETAILED ACTION**

### ***Status of Application***

Claims 1-8, 21-26 and 29-37 are pending. Claims 1-8 are withdrawn. Claims 21-26 and 29-37 are presented for examination.

### ***Response to Arguments***

Applicant's arguments with respect to claims 21-26 and 29-37 have been considered but are moot in view of the new ground(s) of rejection. The applicant's amendments added the intended use limitations into the structure of the device itself, therefore differentiating it over Kregel. However, a new rejection is made over Delot in view of Chandley. The examiner maintains that Delot teaches the essential structure of the device, absent a teaching of the pressure limitations of the device, and that Chandley teaches these missing features.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1711

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delot (GB 1546635) in view of Chandley (U.S. Pat. No. 5042561).

I. Regarding claims 21, 22 and 24-26, Delot teaches a device for applying coating to a lengthy product (see Figure 1), such as a wire (column 1, lines 30-37) by plunging the product into a melt of the coating comprising:

(a) a tank with the melt with means for heating the melt (see element 12, Figure 1 and column 2, lines 71-75);

(b) a camera for applying the coating melt above the tank and having opposite input and output passages (located in the side walls of the camera) through which the product passes (see element 5, Figure 1); and

Art Unit: 1711

(c) a substantially vertical passage extending between the tank and the camera to supply melt to the camera from the tank (element 24, Figure 1).

Delot further teaches maintaining the pressure in the system equal to the atmospheric pressure (column 2, lines 51-53), and the camera having level control means (see element 10, Figure 1). Delot further recognizes that other known methods for applying the molten metal to the camera can be substituted for the pump (column 6, lines 94-97). Delot fails to teach the camera and tank having pressure control and discharge means as claimed such that the melt is transported to the camera, wherein the tank pressure is greater than the camera.

However, Chandley teaches a device for transporting molten metal into a mold above a lower reservoir (abstract) by applying pressure to the reservoir through an inlet above the melt level in the reservoir (Chandley at claim 14 and element 88 of Figure 1) while evacuating the mold by an outlet in the upper portion of the mold above the level at which the melt will rise to (Chandley at claim 2 and element 16a of Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot's device by including in an outlet in the upper portion of the camera and an inlet above the melt level in the tank, and using these means to accomplish moving melt from the tank upwardly to the camera. One would have been motivated to make this modification to simplify Delot's device by eliminating the need for a mechanical pump. Furthermore, one could have substituted Chandley's means for transporting the melt for those of Delot's with a reasonable expectation of success (note that both devices are disclosing methods for counter-gravity transfer of molten metal), and the predictable result of providing a device that allows for counter-gravity transfer of molten metal without the added expense of a pump that must be immersed in melt. Finally, the examiner would like to

Art Unit: 1711

note that Chandley is pertinent to the problem that the applicant was concerned, namely finding alternatives for immersion pumps or immersion tanks for the transfer of metal to an object, therefore Chandley is analogous art.

II. Regarding claim 23, Delot in view of Chandley teach all the limitations of claim 21 as well as the tank having melt heating means (see above) but fail to specifically teach the camera having melt heating means. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot in view of Chandley's device by also having the camera having melt heating means. One would have been motivated to make this modification to ensure that the melt in the camera does not solidify and destroy the functionality of the device.

2. Claims 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delot in view of Chandley and Merrien et al. (U.S. Pat. No. 4585050).

I. Regarding claims 29-31 and 33-35, Delot teaches a device for applying coating to a lengthy product (see Figure 1), such as a wire (column 1, lines 30-37) comprising:

(a) a tank with the melt with means for heating the melt and having an internal pressure

(see element 12, Figure 1 and column 2, lines 71-75);

(b) a camera for applying the coating melt above the tank and having opposite input and output passages (located in the side walls of the camera and below the level of coating material in the camera) through which the product passes (see element 5, Figure 1); and

Art Unit: 1711

(c) the camera having in its lower part an intake vertical passage plunged into the tank (element 24, Figure 1).

Delot further teaches the camera having level control means (see element 10, Figure 1). Delot further recognizes that other known methods for applying the molten metal to the camera can be substituted for the pump (column 6, lines 94-97). Delot fails to particularly teach the device having inputs and outlets for increasing and decreasing the pressure to cause melt to flow to the camera or having the pressure of the camera less than atmospheric to prevent leakage of the coated material through the inlet and outlet of the camera. Delot further fails to teach the device having a camera pressure detector.

First, Chandley teaches a device for transporting molten metal into a mold above a lower reservoir (abstract) by applying pressure to the reservoir through an inlet above the melt level in the reservoir (Chandley at claim 14 and element 88 of Figure 1) while evacuating the mold by an outlet in the upper portion of the mold above the level at which the melt will rise to (Chandley at claim 2 and element 16a of Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot's device by including in an outlet in the upper portion of the camera and an inlet above the melt level in the tank, and evacuating the camera (thereby causing the pressure to be less than atmospheric) through the outlet and increasing pressure in the tank through the inlet to accomplish moving melt from the tank upwardly to the camera. One would have been motivated to make this modification to simplify Delot's device by eliminating the need for a mechanical pump. Furthermore, one could have substituted Chandley's means for transporting the melt for those of Delot's with a reasonable expectation of success (note that both devices are disclosing methods for counter-gravity transfer

Art Unit: 1711

of molten metal), and the predictable result of providing a device that allows for counter-gravity transfer of molten metal without the added expense of a pump that must be immersed in melt.

Finally, the examiner would like to note that Chandley is pertinent to the problem that the applicant was concerned, namely finding alternatives for immersion pumps or immersion tanks for the transfer of metal to an object, therefore Chandley is analogous art.

Second, Merrien teaches a pressure detector (column 3, lines 51-52) for detecting pressure in a tank of molten metal (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot in view of Chandley's device by including a pressure detector in the camera. One would have been motivated to make this modification to have greater control of the pressures in Delot in view of Chandley's device, as this would be highly desirable to maintain the melt in the camera at a desirable level for coating.

II. Regarding claim 32, Delot in view of Chandley and Merrien teach all the limitations of claim 29, as well as teaching the tank having melt heating means (see above) but fails to specifically teach the camera having melt heating means. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot in view of Chandley and Merrien's device by also having the camera having melt heating means. One would have been motivated to make this modification to ensure that the melt in the camera does not solidify and destroy the functionality of the device.

3. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delot in view of Chandley as applied to claim 21, and further in view of Pereira (U.S. Pat. No. 4860820).



I. Regarding claim 36, Delot in view of Chandley teach all the limitations of claim 21, but fail to teach the pressure control means including a melt level detector. However, Pereira teaches a melt level detector (column 3, lines 36-41) operatively connected to means for increasing pressure for use during transporting of molten metal (abstract and Figure). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot in view of Chandley's device by including a pressure control means comprising a melt level detector. One would have been motivated to make this modification to aid in monitoring and controlling the pressure in the camera and tank.

II. Regarding claim 37, Delot in view of Chandley and further in view of Pereira teach all the limitations of claim 36 (see above), including having the melt level detector operatively connected to a device for increasing pressure. Delot in view of Chandley and further in view of Pereira fail to explicitly teach the means for increasing the pressure being a compressor. However, the examiner takes official notice that compressors are well known devices in the art for increasing air pressure. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot in view of Chandley and further in view of Pereira's device by including a compressor to increase pressure. One would have been motivated to make this modification as one of ordinary skill in the art at the time of the invention could have substituted a compressor for the pressure increasing means taught by Delot in view of Chandley and further in view of Pereira's device with a reasonable expectation of success (as it would necessarily be expected to increase pressure appropriately), and a predictable result of

Art Unit: 1711

providing a means for accurately controlling the pressure in Delot in view of Chandley and further in view of Pereira's device.

***Conclusion***

Claims 1-8, 21-26 and 29-37 are pending.

Claims 1-8 are withdrawn.

Claims 21-26 and 29-37 are rejected.

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is

Art Unit: 1711

(571)270-5351. The examiner can normally be reached on Monday-Thursday, 9:00am to 7:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/  
Supervisory Patent Examiner, Art Unit  
1711

/ROBERT S. WALTERS JR/  
December 3, 2010  
Examiner, Art Unit 1711